







This activity is adapted from *Nature Unleashed*, the elementary grade unit of Discover Nature Schools, the Missouri Department of Conservation's conservation education program now adopted in over 800 Missouri schools.

Humans have had both harmful and beneficial effects on peregrine falcons. This activity will help students identify ways humans interact with organisms and ecosystems and realize that these interactions can be both harmful and beneficial.

# **Activity 8.1: Human interactions**

Estimated time 30–40 minutes

# **Objectives**

Students will be able to

- 1. Explain how humans are just one of the organisms interacting with plants and animals in Missouri.
- 2. Identify examples in Missouri where human activity has had a beneficial or harmful effect on other organisms.

### **Teacher preparation**

For background, have students read Chapter 8 of the Nature Unleashed student book.

This is an outdoor activity. Take a brief walk around the schoolyard and note where you find examples of human interactions. During the course of the activity, if students are unsure and/or unable to find examples, refer to your notes and provide subtle prompts for students to discover examples.

#### Materials

Science notebooks
Pencils
Thermometers
Flip chart/white board with lists of human interactions

#### Procedure

- 1. Have students complete their science notebook headings and take and record outside air temperature.
  - Q. How are humans part of an ecosystem?
  - a. A human is an organism living with other human organisms to form populations of humans. Human populations living among other populations of organisms become part of a community. Add the non-living things, such as sunlight, water, temperature, soil, landforms and air, and humans become part of an ecosystem.
  - b. Humans are part of food chains. They are consumers, and energy is passed along to them through the

producers and consumers they eat.

- 1) Most humans are naturally omnivores.
- 2) Some humans are vegetarians (herbivores).
- 3) Some humans farm and hunt for food.
- 4) Some humans depend on supermarkets for their vegetables and meat.
- 5) Humans have teeth similar to omnivores. Most humans choose to be omnivores. Some humans choose to be herbivores (vegetarians).
- c. It may seem as if modern Missourians do not interact as closely with plants and animals as they did in the past, but any human activity affects other organisms.
- 2. Have students work in groups, walk around the schoolyard, and come up with a list of ways humans interact with environments. Include the possible effects these interactions have on those environments. Some examples are: people litter; write graffiti; poach deer, turkeys, fish; dig up wildflowers; drive ATVs through streams; plant trees and flowers; feed birds, etc. Record students' list items on a flip chart.
- 3. Instruct students to create two columns in their science notebooks and label the first column "Harmful Effects."
  - Q. What does "harmful effect" mean?
  - A. Harmful means something that injures or hurts. A harmful effect is the result or consequence of something causing injury or hurt.
- 4. Instruct students to label their second column "Beneficial Effects."
  - O. What does "beneficial effect" mean?
  - A. Something beneficial is something that is good. A beneficial effect is the result or consequence of something good.
- 5. Moving through the flip chart list, have students indicate whether each item listed is a harmful effect or a beneficial effect. Instruct students to write these in the correct columns in their science notebooks.
- 6. Instruct students to move around their schoolyard ecosystem (within pre-determined parameters). Have students record the effects of human interactions found throughout their schoolyard ecosystem. Examples of these human interactions should be listed in their science notebooks under the "Harmful Effects" or the "Beneficial Effects" columns. (Ex: Harmful effects—worn down grass and gardens where students took shortcuts; Beneficial effects—native flower gardens)
- 7. Have students refer to Chapter 8 in their student books to find more examples of human interactions.
  - Q. What other human interactions would you like to add to your lists? Are they harmful or beneficial effects of human interactions?
  - A. Beneficial effects—Examples
    - 1. Humans build and maintain healthy pond ecosystems.
    - 2. People work together to bring parks and hiking trails back into their cities. These green spaces provide habitat for native trees and other plants and attract birds, butterflies, rabbits, foxes and many other organisms necessary for healthy ecosystems.
    - 3. Hunting and fishing are ways for humans to interact with their environment just as other predators do. Missourians who follow the rules and regulations set by the Department of Conservation help to manage and balance wildlife populations.
    - 4. Hiking, bird watching, butterfly watching, mushroom hunting and outdoor photography are other ways humans interact with organisms.
    - 5. People who put out bird feeders, bird baths and bird houses provide food, water and shelter for

Missouri birds.

- 6. People who plant native flowers and grasses provide food and shelter for birds, insects and many other animals.
- 7. Careful harvesting (cutting down certain trees) removes mature trees for use as lumber and paper. Harvesting also provides space and more sunlight on the forest floor for the next generation of trees as well as healthy habitat for other forest organisms.
- 8. Many people are careful not to harm other organisms when they are exploring and discovering nature.
- 9. People join organizations and groups to help Missouri's ecosystems. They also plant native plants and call in to report poachers.
  - (1) ForestKeepers—Volunteers adopt sections of forest and keep records of the forest's health.
  - (2) Adopt-A-Trail—Interested hikers, bikers and motorcyclists who want to have safe and enjoyable trails adopt sections of conservation area trails and monitor them.
  - (3) Missouri Stream Team—Volunteer groups adopt sections of Missouri rivers, streams and creeks. They test the quality of the water and clean up litter.
  - (4) Operation Game Thief—People can call in anonymously and report poachers.
  - (5) Grow Native—Planting native plants not only benefits wildlife, but the plants can be enjoyable for the gardener.

# Harmful effects—Examples

- 1. When people carve their initials on the bark of a tree, carving leaves the tree's trunk open to disease and insects.
- 2. People who hike, ride ATVs, bicycles or horses off marked trails through streams, forests and prairies can damage these ecosystems.
- 3. Some people litter, and litter is not only harmful to organisms and their environment, it is also ugly.

# Wrap-up/assessment

After discussing the items on the lists, distribute Writing Scoring Guide to students. Ask students to re-read the summary box for Chapter 8 in their student book and write at least three paragraphs in their science notebooks describing how they feel about their role as a human organism in the schoolyard and what effects they feel their interactions have had on their schoolyard ecosystem.